1. Relevance relative to the call for proposal

We will investigate the relationship between health and labour market participation for older individuals in Norway. The population is ageing, with large cohorts approaching retirement age. The consequences for the public finances through pension benefit claims and possibly increasing health care expenditures are much debated. Given the relative long average expected lifespan in good health, the fiscal sustainability of the pension system in particular and the welfare state in general depends on high labor force participation rates of older workers, and policies are designed to accomplish this.

However, we observe differences in health status, income and accumulated wealth including accumulated retirement benefits between groups of people approaching retirement age. There are several unsettled issues when it comes to how such factors influence the retirement decision of individuals. On the one hand, work capacity depends crucially on present health conditions and sudden changes in health will affect individuals’ ability to participate in the labour market. On the other hand, the labour market connection can in itself have effects on health, and it is not obvious whether retirement will improve or worsen health status. A person’s health status and life expectancy can also affect the decision to convert accumulated pension wealth into a stream of pension income (pension uptake).

In the epidemiology literature health’s role as a ‘push’ factor has long been recognized, however, in the empirical economics literature health has not taken the same position neither as an explanatory variable nor as an outcome variable. This is unfortunate because it seems to be strong consensus that health is a vital factor in decisions related to early retirement, together with financial incentives, family situation and workplace factors. One obvious reason for the deficit has been lack of good data on health and health outcomes.

We offer analyses based on rich datasets including health data. The datasets are constructed by merging high quality data from several national registers.

The objectives of this project are 1) to analyse the effects of health on income, labour supply and pension uptake for older employees, and 2) to analyse how early retirement and reduced work load or working hours affect health. Throughout the analyses of the project, we will have a focus on how the effects investigated vary by gender and socioeconomic status.

Our research will be complementary to ongoing research financed through VAM and EVAPEN. Professor Kjell G. Salvanes is in charge of the project “Health and the labor market” (VAM project no. 227018). The main objective is to study how structural changes in the labour market (e.g. higher demand for skilled workers, increased labour force participation of women or increased globalization) affect the health of individuals in their 40s. We will study how early retirement and reduced work load influence health for older employees.

In EVAPEN project 220746 headed by professor Erik Hærnes the central theme is to analyse the total effect of the pension reform (and other possible pension related changes) on work, earnings and income distribution. The flexibility that the pension reform offers in the private sector, i.e. pension uptake in combination with work, may have differential impact depending on the health situation of older workers. We want to explicitly study how health influences the retirement age and the retirement uptake.

The identification of causal effects is crucial. Our identification strategy is based on exploiting exogenous variation in health status and changes in labour market incentives through reforms that have been undertaken. The analyses will be based on unique register data containing individual information on health, work and social security. The project includes a PhD stipend and senior research output. The project has an international profile as we collaborate with professors in UK and the Netherlands. We will arrange an international
workshop on the topics health, retirement and labour market participation for older workers early in the project period, and a user conference later on in the project period.

The proposal is of particular relevance for the thematic area 4.2.3 “Value creation, the labour market and the organisation of working life” presented in the VAM work programme 2013-2018 (VAM II). The project is of high policy relevance, and it will contribute to strengthen international research collaboration as well as methodological diversity by unique us of Norwegian register data of high quality.

2. Aspects relating to the research project

2.1. Background

In recent decades, most OECD countries have managed to achieve significant improvements in both the expected lifetime at birth; reduced mortality rates and the associated quality of life of their populations. While the population is ageing, with large cohorts approaching retirement age, the average life expectancy is increasing. In 2009, for Norway remaining life expectancy was at the age of 65 years 18 and 21.1 years for men and women respectively. Indeed, the number of years that men and women at age 65 could expect to live without ill-health was 13.5 and 14 in 2009 (Ervik and Skogedal Lindén, 2013). However, these achievements have created new societal challenges. One major challenge at the macro level is the (optimal) balance between active working life, the benefit claiming period in good health and the care-dependent life period in the population. Across many countries in Europe, a number of policy changes have been suggested to encourage a population that is becoming increasingly long lived, to work longer.

At the individual level, health status, income and accumulated net wealth are three key determinants of well-being. It is reasonable to assume that these factors play a decisive role when individuals make decisions related to (i) the timing of retirement (withdrawal from the labour market); (ii) the resources available to people when they decide to leave the labour market and (iii) the timing of benefit claiming, but how and to what extent is not well understood. It is also evident that health, income and accumulated net wealth are crucial in the generation of societal disparities. Thus, an understanding of how the interaction between these key determinants influence decisions made by individuals at mature and old age is essential.

Clearly, the nature and intensity of this interaction on the individual level depends on work conditions, family conditions and financial incentives. Institutional arrangements concerning retirement schemes, disability pension schemes, sickness benefit systems, the health care system and (expected) long term care quality are likely to be important too.

2.2. Approaches, choice of method and hypotheses

The requirements for a better understanding of the interaction between health, work (income) and net wealth at the later stages of the working life are threefold:

- detailed data about health, income, work and net wealth,
- careful measurement and modelling of the key behavioural relationships involved, and
- sound research strategies to identify the mechanisms underlying the interaction between health, work and net wealth.

The context in Norway allows us to address all of these conditions in a satisfactory way. We will use detailed administrative databases that cover across many years each individual’s health care consumption (e.g. hospitalisation), mortality, working history, social insurance uptake (e.g. sickness, disability and old age pensions), income and education. The team consists of experienced internationally acknowledged researchers in the area and we are able to exploit the institutional changes that have taken place in Norway since the late 1980’s to identify causal pathways. Below we extend on this in our project: “Aging, health and labour market participation”.

2
2.2.1. Data
An important part of this project is to establish a dataset where individual health data will be linked to relevant work and social security information. Data will be collected from public registers, which have several advantages compared to survey data: there is no recall bias, no justification bias, and no reporting bias due to individuals being reluctant to report very low or very high income. And, most importantly, we avoid problems with attrition/sample selection, which can be a severe problem particularly in surveys of older people.

Our data on social security, work and income will be derived from the FD-Trygd database, which links administrative information from the National Insurance Administration, Statistics Norway and the Directorate of Labour. The database covers all Norwegians between 16 and 67 years of age from 1992 and onwards. Besides detailed information on work, income and social security (sick leave, disability, retirement, etc.), FD-Trygd includes extensive background information such as education, marital status and number of children.

Individual information on health will be obtained from three databases; the Norwegian Patient Register (NPR) and The Norwegian Health Economics Administration (HELFO). The health data will be merged with data from FD-Trygd.

NPR contains detailed patient level information on all hospital admissions in Norway (both somatic and psychiatric health care). Since the NPR register does not include social security numbers of patients before 2008, it is only possible to merge hospital data with data from other registers from 2008 onwards. We will obtain information on number of admissions, type of admission (planned/emergency, outpatient/inpatient, etc.), length of stay and main diagnosis for the period 2008-2013. The register also contains information on whether the admission is due to an accident demanding acute hospitalization. This information will be used to identify such individual health shocks. Having information on type of admission, length of stay and diagnosis, we will be able to study how individual morbidity and health shocks affect labour market outcomes.

HELFO is responsible for the Norwegian primary care patient list scheme. There are more than 4100 registered primary care physicians (GP) with a total list population of around 5 million inhabitants (99.6% of the population). For each patient consultation, GPs send an invoice to HELFO. The register includes information on patients’ age and gender, date and time of contact, diagnosis according to ICPC-2-diagnosis code and codes from a tariff for type of contact. We will obtain data from 2006-2013. Data from HELFO will provide information about physical and mental health (through diagnosis and number of GP visits) and will be used as outcome measures or to control for health heterogeneity in analyses.

Access to and merging of data sets requires authorization from data owners, The Norwegian Data Protection Authority as well as Regional Committee for Medical and Health research.

2.2.2. Methodological approach
Health influences labour market participation and labour market participation influences health. Analysing causal relationships between labour market participation and health is therefore challenging (see Angrist et al. 2008). For example, if we are interested in how early retirement (or a reduction in working hours) affects later health; we must take into account that employees might choose early retirement (or to reduce their working hours) due to health impairments. Likewise, if we are interested in how health influences early retirement decisions, it is difficult to distinguish early retirement caused by health problems from early retirement motivated by financial or other considerations (since they are likely to be correlated to health).

In this project we propose to solve such methodological problems utilising various reforms that provide exogenous variation in the relevant explanatory variables. The basic idea
is to identify individuals who are exposed to a policy (or health) shock (the treatment group) and compare them to individuals not exposed to the same shock (the control group). Having information on the outcome before and after the shock for both groups, we can identify causal relationships by a difference-in-difference approach (where a shock affects the treatment group but not the comparison group) or regression discontinuity analysis (where, e.g., a reform affects differently individuals born before and after a given date).

2.2.3. Research topics and choice of method

**Topic 1: The effect of health on employment outcomes and pension uptake**
This topic addresses a series of policy questions. It is agreed upon in the literature that financial incentives are important for retirement decision (e.g. Gruber and Wise, 1998). Less clear in the literature is the role of health for the labour supply decision at older ages. Earlier work by McGarry (2004) and Bound et al (1999) has shown for the US that changes in health are important for the decision to retire. Recent work by Banks, Emmerson and Tetlow (2007) shows that the effect of financial incentives differs by worker health status: the pension wealth matters less for the retirement decision of those in poor health. Recently, Erdogan-Ciftci et al. (2008) have confirmed this finding for Spain. We elaborate on the relationship between health status, current income and pension wealth in topics 1:1, 1:2 and 1:3 below.

**Topic 1:1 The effect of health on retirement decisions**
How health status influences retirement decisions in Norway is generally not well understood. Before the Pension reform implemented in 2010/2011, it was not possible to combine work and benefit claims without facing a substantial increase in the marginal tax rate, and consequently, this option was rarely used. The reform allows employees from the age of 62 much more flexibility in their labour supply decisions: claims in the range of 20 to 100% of the yearly entitlement can be combined with no, part time, or full time employment. Financially, an early claim reduces the yearly level of eligible benefits but in principle does not alter much the aggregated pension or benefit level received. Continued work adds to the accumulated pension wealth.

Health status may influence retirement decisions differently before and after the reform. Before the reform ill-health could result in total withdrawal from the labour market (early retirement or disability pension). After the reform, the combination of reduced working hours and benefit claim is an option. The reform gave individuals of good health, with high life expectancy, a stronger incentive to continue working in order to increase their accumulated pension wealth. We investigate how health and changes in health impact on labour supply using unique data sets which contain accurate and detailed individual information on health (NPR), type of pension and pension entitlements (FD-Trygd). For all individuals, pension wealth, in addition to other net wealth components, can be linked with data from NPR covering hospitalisations during the period 2008-2013. As a result, we can investigate the interaction between health status, financial incentives and retirement behaviour before and after the pension reform. In the analysis, we will exploit the fact that the exogenous change in financial incentives that the reform provides, varies by worker cohort. Hospitalisation data from NPR will be used as proxies for health and changes in health, and we will analyse how exogenous shifts in health affect labour market decision in a difference-in-differences framework where we use data before and after the pension reform.

**Topic 1:2 The effect of health on pension uptake**
The pension reform of 2011 described above made it possible for all workers to receive pension benefits from the age of 62. Individuals of a given cohort are faced with the same institutional framework; however, they differ in their life expectancy. The sustainability of the pension system requires that individuals do not act on private information of own life
expectancy. The new pension system is actuarial neutral, and assumes no private information of own health. If there is systematic selection in the uptake decision, where persons with below average life expectancy retire early, and persons with above average life expectancy retire late, this will pose a financial challenge on the pension system in the long run. We will utilize health status observed over several years (NPR, HELFO) as a proxy for life expectancy. We hypothesize that i) other things equal, individuals with a short life expectancy will have a higher pension uptake at early ages, ii) given own life expectancy, gender, marital status, spouse’s or co-habitant’s life expectancy and number of children matters because of variation in expected household income, bequest motives and risk aversion.

**Topic 1:** The effect of health shocks on the labour market participation for the spouse

Previous research on retirement decisions shows that there are complementarities in leisure among spouses (Favreault and Johnson, 2001; Baker, 2002). Further, spouse’s health status may have effects on an individual's employment transitions. The reason is that care giving within a household diminishing the probability of paid employment (Garcia-Gomez et al., 2010, Heitmueller, 2007). On the other hand, health shocks can result in a significant loss in family income if the worker reduces labour supply. A household can counter the income loss if the worker’s spouse increases labour supply, generating an "added worker effect". Coile (2003) explore the effect of health (shocks) on the spouse’s labour supply using US survey data, and finds no significant effect on retirement neither for men nor women. However, we think it would be interesting to explore these relationships in a Norwegian context.

It is likely that the generosity of the insurance systems (e.g. health insurance and social insurance) has an impact on the spouse's labour supply decisions. We will investigate how health shocks (measured as an emergency admission at hospital) affect income, labour supply and early retirement decisions for the spouse. In the analyses we will focus on health shocks of different types (by main diagnosis) and severity (by hospital length of stay). Furthermore, we will focus on gender differences and socioeconomic status, since such factors probably influence how, and to what extent, health shocks affect the labour market participation of the spouse.

**Topic 2: The Health effects of Retirement and Reduced Work Load**

Most OECD countries are currently undertaking measures to prolong the working careers of older workers (OECD, 2009; Gruber and Wise, 2004). However, a natural question - which has been largely overlooked by policy makers - concerns the effect of later retirement on individual well-being and, in particular, on health. Adverse (or positive) effects from later retirement on post-retirement health not only influence individual well-being but also directly affect health care costs after retirement. Cross-sectional analyses usually find that those who retire early have worse post-retirement health. Dave et al. (2006) find that earlier retirement is associated with poorer physical and mental health after retirement. It has been hypothesized that retirement in itself is a stressful event, or that retired people lose the physical and mental activity that is associated with work and/or that social networks associated with work decline. The policy implication of such findings indicates that increasing retirement age would lead to better individual health and well-being and may reduce the burden on (public) health care systems as well as on pension systems. Alternatively, it may be true that aspects of work (stress or job characteristics like pollution or hardship) worsen health, leading to positive effects from retirement and negative effects from continued work. These alternative mechanisms illustrate that it is difficult to infer causation from a direct comparison of the health status of early retirees with later retirees. Indeed, health may affect work and vice versa. Moreover, unobserved factors may confound the relationship between health and work.

There is now an emerging literature that tries to circumvent the methodological problems using British and US data (Neumann (2007), Bound and Waidmann (2008) and Coe
and Lindeboom (2008)). This literature generally agrees that the cross sectional findings of Dave et al. (2006) are likely to be spurious effects but they have failed to pin down the exact magnitude of the true causal impact of prolonged work on health. This is primarily due to the fact that their data do not have sufficient variation in labour market behaviour that is not induced by health changes itself.

**Topic 2: Health effects of early retirement**

The causal effects of retirement on health are difficult to observe because ill-health is often a reason for retirement. Within epidemiology, studies on the potential health consequences of retirement have produced conflicting results (Jokela et al, 2010). As the authors point out, many of these studies have been cross-sectional and results are potentially biased because of reversed causality. We contribute to this literature by utilizing changes in policy or institutional arrangements to reveal causality. Moreover, as the short-term and long-term effects of retirement may differ, having detailed panel data over an extended period is important. We will study health effects of early retirement within two different time frames, utilizing different institutional changes:

- **i)** With a follow-up period of 1-3 years after policy change, we investigate health effects of prolonged employment (hospitalization, NPR). The Norwegian Pension reform provides variation in retirement decisions that are exogenous to individual health status. This reform has succeeded in inducing older workers to work longer (Nordby, Nerland and Næsheim, 2013). It affected public and private sector employees differently, which makes it possible to construct comparison groups.

- **ii)** Long term health effects are investigated by exploiting the implementation of an early retirement scheme (AFP). The AFP scheme gradually lowered the eligibility age for those covered (starting from 67 to 66 in 1989, and finally from 63 to 62 in 1998. Eligibility is observed from 1991 onwards). Also note that this program covers only around 40% of the employees in the private sector. Hærnes et al (2012) use this reform to investigate whether the retirement age affects mortality, and conclude that there is no such relationship. Our analysis focus on less extreme health outcomes; hospital admissions and GP visits (with a particular focus on diagnosis of mental disorders). We will apply a difference-in-difference approach, where we construct a treatment group for which the entitled retirement age gradually fell to 62 years and a control group for which the formal retirement age remained 67 throughout. Thus, we can elicit causal effects.

**Turning next to the issue of workload**, it may be that stimulus of individuals to stay longer at work keeps them healthier at the same time. The literature on labour market participation among elderly workers is rich and focuses on financial incentives (Coile and Gruber, 2007), health (Lindeboom, 2006), and the relationship between the two (Erdogan-Ciftci, van Doorslaer and López-Nicolás, 2011). However, most previous studies on the relationship between health and labour supply focus on how people respond on the extensive margin (to participate or not) and its influence on later health status. Little is known about the effects of reductions in work load or hours of work (responses on the intensive margin), simply because there are few clearly identifiable cases to study. In addition, there are several methodological challenges involved in estimating its effect. To isolate the effect, employees must have the option of reduced work load/hours of work while wages are unaffected and the influence of other potentially important factors such as age or general time trends must be controlled for. Lastly, the workers who are offered a reduction in work load or hours of work are typically not randomly selected and therefore not comparable to the control group due to unobservable characteristics influencing their labour supply and retirement decisions. We will study the health effects of two reforms that provided exogenous variation in working hours/work load for elder employees:
**Topic 2:2 Health effects of increased vacation**

Vacation, as a time off from work, offers the chance to recover from work demands and to build new resources. Assumedly, such recovery is especially important for older workers. Although positive effects of vacation on employee well-being have been found, studies on the effects of vacation are still rare and inconclusive (for a review, see Eden (2001) or de Bloom et al. (2009)). Previous studies also focus on short-term effects of vacation. In this project, we will use a large Norwegian reform to study whether prolonged vacation for older employees has an effect on their health or labour supply decisions (e.g. sickness absence and early retirement).

Before 2001, all employees were eligible to five weeks paid vacation (in a full position). From 2001, individuals turning 60 years old before 1 September got the right to an extra week of (paid) vacation that year. In 2009, the reform was extended to include individuals turning 60 after 1 September. However, for the period 2001 to 2009 the reform implied that an individual’s birthday was decisive for the length of his/her vacation. Two individuals of the same age, but born just before and just after 1 September, had the right to five or six weeks’ vacation, respectively. Thus, this reform provides us with a unique opportunity to study the causal effect of vacation on elder employees, while controlling for age and income. Individual health effects will be studied using data on GP visits (HELFO) and sickness absence (FD-Trygd). Information on labour supply, such as income and early retirement, is available from FD-Trygd. To identify effects of vacation on health and labour supply, we will apply regression discontinuity analysis.

**Topic 2:3 Health effects of reduced work load**

Some employers try to organize working hours or work tasks in a way that makes it more attractive for older workers to stay with the firm. We will study one such initiative, namely the reduction of workloads for older teachers.

In the last decade, special measures have been taken towards these employees, in the form of reduced number of hours taught in the classroom. As of August 1 2006, teachers have the right to have the number of hours taught reduced by 5,8 % and 12,5 % from the beginning of the school year when the teacher is 55 and 60 years, respectively. In the agreement between employer and employee’s organization it is stated explicitly that the intention is to “ease individual working conditions”. Before August 2006, the same reduction was given at age 58 and 60, respectively.

Accordingly, at certain ages, it is year of birth which determines the hours taught. Two teachers of virtually the same age but born in succeeding calendar years, will experience different work load. For instance, a teacher who was fifty-five in December 2006 would teach 5,8 % less than a younger teacher – including one who became fifty-five in January 2007 - throughout the school year 2006/2007. The school year when the elder teacher becomes 60 years, an analogue difference in work load arises. This arrangement provides us with a unique opportunity to study the causal effect of work load on health and labour supply decisions for older employees, while controlling for age and income. We will apply regression discontinuity analysis.

**2.3 The project plan**
See application form

**2.4 Budget**
See application form

**2.5 Project management, organisation and cooperation**
The following researchers will participate. Further details in attached CV.
- Professor Arild Aakvik, Department of Economics, University of Bergen, and Uni Research Rokkan Centre, Principal Investigator (PI).
- Professor Jan Erik Askildsen, Uni Research Rokkan Centre and Department of Economics, University of Bergen.
- Associate Professor Astrid Grasdal, Department of Economics, University of Bergen.
- Professor Andrew Jones, Department of Economics and Related Studies at the University of York, UK.
- Professor Maarten Lindeboom, Department of Economics at VU University Amsterdam, Netherlands.
- Senior researcher Tor Helge Holmås, Uni Research Rokkan Centre.
- Senior researcher Karin Monstad, Uni Research Rokkan Centre.
- Senior researcher Egil Kjerstad, Uni Research Rokkan Centre.
- PhD student, to be recruited.

The researchers have extensive experience in project management and tutoring and a good track record of publications. The host institutions provide all relevant support for the research to be undertaken.

The project will be hosted by Uni Research Rokkan Centre, which is an interdisciplinary social science research centre in Bergen. Its research groups and research programmes cover a broad range of social and cultural approaches. The centre is a department within Uni Research, a research enterprise owned by the University of Bergen. Uni Research Rokkan Centre organises its research into four research groups. This project will be placed within the research group Welfare and Health Economics. This group also includes the extensive research that has been going on in Health Economics Bergen (HEB). HEB is a well-established programme for economic research into health and health care. The main objective at HEB has been to provide knowledge on organization and governance structures of the health care sector. Main fields of research include economic analyses of resource use in health care institutions, and economic evaluation. The programme is based within economics and business administration but emphasises multidisciplinary research cooperation with medicine, health care institutions and other social sciences. The research at Uni Research Rokkan Centre takes advantage of its multi-disciplinary structure, and we will emphasize that we will use the potentials at the centre for discussing and presenting work for researchers working in related fields with diverse scientific background.

A main collaborating partner will be The Centre for Economic Studies in Social Insurance (Trygdegruppa). The Centre is an integrated part of the Department of Economics at the University of Bergen, with an obligation to do research, tutoring and teaching in social insurance economics including issues related to health and education. It aims to carry out and stimulate research on questions regarding the economic effects of the social insurance system. The main research focus is on empirical analyses using large micro data sets, working together with researchers at the Department of Economic and research institutions such as Uni Research Rokkan Centre. The group has supervised almost 100 master students and more than 10 PhD candidates in recent years, and has published 125 publications since 1994. Astrid Grasdal from this group will be connected to the project, but is not part of the budget. She will do important work related to data acquisition and the PhD student.

Two internationally highly recognised researchers will participate in the project; professor Maarten Lindeboom, Department of Economics at VU University Amsterdam, Netherlands and professor Andrew Jones, Department of Economics and Related Studies at the University of York, UK. Professor Lindeboom and Professor Jones have been affiliated with HEB and Department of Economics (Trygdegruppa) since long, and will give us the opportunity to cooperate closely with two main centres in Europe for empirical research into health, ageing, working life and social insurance. The contact with Maarten Lindeboom will
in particular facilitate cooperation with members of his Netspar (Network for studies on 
Pensions and Ageing) funded research theme “Income, Health and Work across the life cycle. 
This group is located at the Department of Economics of the VU University Amsterdam and 
is internationally renowned for its strong research in the field of applied micro 
econom(etr)ics. Andrew Jones will have an advisory role towards the researchers and the PhD 
student on the project. He was responsible for the running of the MSc in Health Economics at 
the University of York between 1994 and 2011. During that time there were over 500 
graduates. He has also supervised 23 PhD students. He is now Head of the Department of 
Economics and Related Studies at York. He is a leading researcher within health economics 
and has published extensively in international journals. Professor Jones is currently financed 
in a part time position by the Department of Economics, University of Bergen.

All Norwegian participants have been heavily involved in project work and empirical 
work including methodological developments, as well as participated in public councils and 
commissions dealing with relevant issues.

The PhD student will be enrolled as a student at Department of Economics, University 
of Bergen. The department has a well-functioning PhD programme, and in particular a large 
core of post docs and PhD students within the fields of social insurance and health economics. 
It has also good contacts with universities abroad, notable in this context are University of 
York and VU University Amsterdam. The PhD student will utilize this network.

The Netherlands, UK, Sweden, and Norway have different institutional arrangements 
and have undertaken different reforms during recent years to effect labour market 
attachments. Reforms in the Netherlands, and research evaluating these, have attracted 
particular interest, and the pension reform in Sweden is also very relevant. We will therefore 
host a workshop in 2015 with participants from Norway and the research groups at VU 
Amsterdam, York University and Swedish researcher aimed at discussing these reforms and 
methodological challenges evaluating them.

3. Perspectives and compliance with strategic documents
3.1. Compliance with strategic documents
The project enters into core research activities of Rokkan Centre and University of Bergen, as 
well as those for partners. The host institutions will provide all necessary research support.
3.2. Relevance to society
The objectives of this project are highly relevant to society. The understanding of how health 
influences (early) retirement decisions in Norway is limited, likewise, the understanding of 
how early retirement or reduced work load influences health. These are important issues for 
the sustainability of the welfare society.
3.3. Environmental perspectives
The project is not expected to have any external environment effects.
3.4. Ethical aspects
The analyses will be based on data for which concessions exist or will be applied for.
3.5. Gender equality and gender perspectives
Issues concerning health, income and labour market participation are highly relevant in a 
gender perspective. In the application for Ph.D. candidate, we will follow University of 
Bergen recruiting rules, which explicitly address the gender issue giving priority to female 
applicants.
4. Communication with users and utilisation of results
4.1 Communication with users
The project will entail a user conference organized towards the end of the project period.
4.2. Dissemination plan
Dissemination plans are detailed in the grant application form.
**References**


